REMARKS

In the Official Action, the Examiner rejected independent claim 6, certain claims depending therefrom, as well as dependent claim 10, under the first paragraph of 35 U.S.C. §112 for allegedly failing to have descriptive support for the embodiment wherein the ink-receptive layer on the substrate has a light-to-heat conversion function. Such phrase has now been canceled from claim 6 thereby restoring the original recitation of the substrate found in original claim 1 while claim 10 has been canceled without prejudice or disclaimer. Since claim 6 was not the subject of any rejection on prior art grounds, applicants respectfully submit that the aspects of the invention defined in claim 6 and the claims depending therefrom are now in condition for allowance.

The present Amendment also revises claim 8 to include the subject matter of claim 14 with the dependency in the latter claim being deleted (along with the dependency to clam 6 which also includes the subject matter of claim 14) and amends claim 12 to correct a typographical error. Furthermore, claim 9 has been amended to recite the amount of the defined colloid. Support in the specification for this range of 63.3 to 93.0 wt % based on the total solid content of the hydrophilic layer is based on the description of the hydrophilic layer and the disclosed amounts of the hydrophilic resin on page 8 which is preferably 5 to 20 wt% based on the total solid content of the hydrophilic layer and disclosed amounts of the light-to-heat conversion material on page 19 which is preferably 2 to 20 wt% based on the total weight of the colloid and the hydrophilic resin. In other words, assuming that preferred minimum amount of the colloid is "X" when the amounts of the hydrophilic

resin and the light-to-heat conversion material are at their maximums, then the calculation is as follows:

$$X + 20 + (X+20) \times .2 = 100$$

This equation results in X = 63.3 wt%.

Performing a similar calculation for the upper part of the range (designated as "Y"), the calculation is:

$$Y + 5 + (Y+5) \times .0.02 = 100$$

This equation results in Y = 93.0 wt%.

The Examples in the application also support the claimed range with the calculated amounts of the colloid the Examples being set forth in the following Table:

Example No.	Colloid		Hydrophilic Layer		Light-to-Heat Converting Agent		Crosslinking Agent*		Surfactant	
	Amount	Wt%	Amount	Wt%	Amount	Wt%	Amount	Wt%	Amount	Wt%
1-3,6-11,16	0.90 g	83.3	0.10 g	9.3	0.08 g	7.4	--	--	--	--
4	0.90 g	76.3	0.20 g	16.9	0.08 g	6.8	--	--	--	--
5, 12-15	1.35 g	84.4	0.15 g	9.4	0.10 g	6.3	--	--	--	--
17	0.90 g	77.5	0.10 g	8.6	0.13 g	11.2	0.03 g	2.7	--	--
18-22	1.60 g	65.0	0.40 g	16.3	0.10 g	4.1	0.32 g	13.0	0.04 g	1.6

* - The amount of the crosslinking agent was calculated as the practical solid content of the hydrolysis product. "Wt%" represents a value based on the total solid content of the hydrophilic layer.

Before addressing the prior art rejections set forth in the Official Action, applicants believe that a discussion of the present invention and the advantages which may be obtained therefrom is appropriate. As recited in independent claims 6, 7 and 9, the present invention relates to a heat-sensitive lithographic printing plate precursor comprising a substrate having an ink-receptive surface or coated with an

ink-receptive layer having provided thereon a hydrophilic layer which comprises a colloid of an oxide or a hydroxide of at least one element selected from the group consisting of beryllium, magnesium, aluminum, silicon, titanium, boron, germanium, tin, zirconium, iron, vanadium, antimony, and transition metals, a hydrophilic resin, and a light-to-heat conversion material. Independent claim 8 recites a substrate subjected to a surface roughening treatment and then coated with an ink receptive layer along with the same hydrophilic layer. Independent claim 9 further recites amounts of the components in the hydrophilic layer and claims 6-8 further recite a hydrophilic overcoat layer capable of being removed on a printing machine.[1]

Upon imagewise exposure, the plate can be loaded onto a printer wherein the hydrophilic overcoat layer and the exposed portions of the hydrophilic layer are removed, the removal of the exposed portions of the hydrophilic layer exposing the underlying ink-receptive surface or layer. This explanation is set forth on pages 35-36 of the specification and an illustration of this sequence with explanatory comments was provided in connection with the response filed on May 27, 2003. In other words, the hydrophilic layer is removed in the image exposed portions thereby revealing the underlying ink-receptive surface or layer without the hydrophilic/hydrophobic property of the hydrophilic layer being changed upon exposure.

In the Official Action, the Examiner rejected claim 9 as being anticipated by Vermeersch et al., U.S. Patent No. 6,210,857. Vermeersch et al. describes a heat

1 The advantageous results which can be attained due to the presence of the hydrophilic overcoat layer were illustrated in the Declaration Under 37 C.F.R. §1.132 submitted with the response filed on May 27, 2003.

sensitive imaging element for providing a lithographic printing plate which comprises a lithographic base with a hydrophobic oleophilic surface and a top layer comprising a compound capable of converting light into heat and a hydrophilic polymer that is cross-linked. As set forth in the passage beginning at column 5, line 4, the cross-linked hydrophilic layer can also preferably contain substances that increase the mechanical strength and porosity of the layer, such as colloidal silica, which is present in an amount of 0.05 to 10 parts by weight versus the amount of the hydrophilic binder. As set forth in the sentence starting at column 5, line 22, the crosslinked hydrophilic polymer yields a top layer which is insoluble in water or in an aqueous fountain solution. Vermeersch et al. further discloses at column 5, lines 29-35 that between the top layer and the hydrophobic oleophilic surface of the support there can be at least one additional layer which comprises at least one compound selected from the group of hydrophilic binders, silica and polymer latices.

From the foregoing discussion of the present invention and particularly the aspect of the invention defined in claim 9, applicants respectfully submit that the amended claim is patentable over Vermeersch et al.. The patent does not teach the defined hydrophilic layer with the recited amount of colloid. Furthermore, the patent provides no reason for altering the amount of colloid beyond what is disclosed in column 5. Thus, this aspect of the invention is also believed to be patentable over the cited art.

Independent claim 7, as well as the aspect of claim 12 which depends therefrom and the aspect of claim 14 which depends from claim 9, were rejected under 35 U.S.C. §103(a) over the combination of Vermeersch et al. and Gardner, Jr.

et al., U.S. Patent No. 5,939,237. This latter patent describes a "no-process printing plate" which includes a hydrophilic protective layer which can be removed after exposure by the action of the fountain solution, ink and/or printing press when the imaged plate is located on the printing press (column 3, lines 34-37). As disclosed in the paragraph beginning at column 3, line 27 and as reflected in claim 1 of the patent, a photosensitive composition is provided which is more hydrophilic in a first area and less hydrophilic in a second layer as a result of being exposed or not exposed to radiation. The paragraph bridging columns 7 and 8 discloses that the top coat is capable of being removed after exposure by the action of fountain solution and/or the action of the printing press.

Initially, it will be appreciated that Gardner, Jr. et al. does not remedy the deficiencies of Vermeersch et al. as applied to claim 9 and that accordingly claim 14, like claim 9, is allowable over the cited art. As to claims 7 and 12, it is evident that the construction of the plate in Gardner, Jr. et al. (wherein the exposed photosensitive composition provides different levels of hydrophilicity/hydrophobicity) is substantially different from that of the present invention wherein the exposed portions of the defined hydrophilic layer are removed and, for the same reason, the disclosed plate is substantially different from Vermeersch et al.. Since the construction in Vermeersch et al. is different from that of Gardner, Jr. et al. and since Vermeersch et al. does not disclose the need for a protective layer, there is no proper basis for making the proposed combination. Furthermore, even if a proper basis existed for suggesting the combination, the hypothetical combination would still not lead to an understanding that the press life can be substantially improved as

illustrated in the experiments provided in the aforementioned previously submitted Declaration. Thus, applicants respectfully submit that the presently claimed invention is patentable over this combination of documents.

Teng, U.S. Patent No. 6,014,929, has been cited to show surface roughening of a substrate, in a rejection of claim 14/8 that is further based on the combination of Vermeersch et al. and Gardner, Jr. et al.. However, since the subject matter of claim 14 has been incorporated in claim 8 and it has previously been explained why the hypothetical combination of Vermeersch et al. and Gardner, Jr. et al. is not proper, it follows that the aspect of the invention defined in claim 8 is patentable over the combination of the three documents.

For all the reasons set forth above, applicants respectfully submit that since each of the rejections set forth in the Action has been met, applicants respectfully request reconsideration of the amended claims and allowance of the present application.

Should the Examiner have any questions concerning the present application, she is invited to contact the undersigned attorney at the number provided below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: _____
Robert G. Mukai
Registration No. 28,531

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620

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